

TITLE:**AUTHOR:** Renata Reis da Silva**ABSTRACT**

Effect of different solvents on the extraction and yield of secondary metabolites of the crude and fractionated extracts of the *Rollinia mucosa* (Jacq.) Baill was investigated by simplex centroid design mixtures of ethanol, ethyl acetate, dichloromethane, acetone and chloroform. The effect of the composition of mobile phase on the chromatographic separation of the extracts of the organic and basic fractions also was investigated. The number of peaks was used to evaluate the extraction efficiency. A mixture of acetonitrile:methanol:water (17,5:17,5:65% v/v/v) was chosen as the mobile phase. The largest crude extract yield was obtained using a ternary mixture of ethanol:dichloromethane:chloroform (1/3:1/3:1/3 v/v/v). The largest neutral fraction yield was obtained using a ternary mixture ethanol:dichloromethane:chloroform (1/3:1/3:1/3 v/v/v). The largest yield of the organic fraction was obtained for the quaternary mixture of ethanol:ethyl acetate: acetone:chloroform (1/4:1/4:1/4:1/4 v/v/v/v), and the five component mixture was more efficient at extracting the basic fractions. The largest yield of the fiber fraction occurs for the pure dichloromethane solvent. Principal component analysis and hierarchical cluster analysis models were applied to chromatograms and middle infrared (FTIR) spectral data of different extracts to discriminate the chemical compositions as mixture composition change.